SONY

CCD-V99

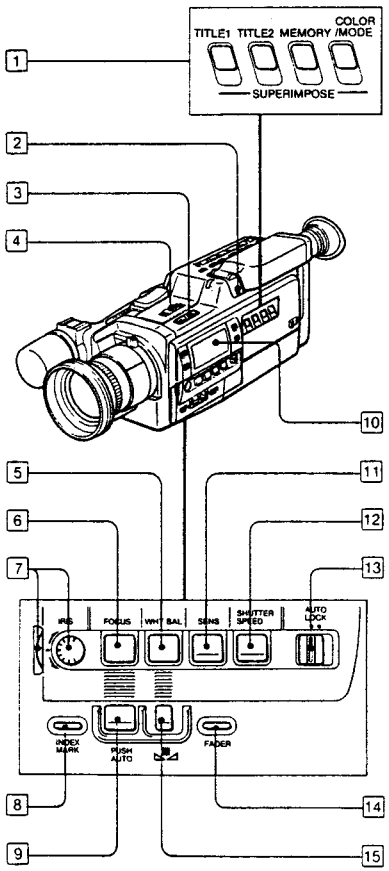
MODEL

USER MANUAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

This section is extracted from instraction manual.

A-1



For details on the use of each control, refer to the pages indicated in the circle.

A-1

1 **SUPERIMPOSE buttons** ㉚
Used to record the title.
TITLE 1 button
TITLE 2 button
MEMORY button
COLOR/MODE button

2 **PUSH SLIDE button** ⑱
Press to adjust the position of the viewfinder.

3 **EDITSEARCH button** ⑲, ㉒, ㉙

4 **POWER switch**
CAMERA: For camera recording
PLAYER: For playing back or editing tapes
OFF: Power off

5 **WHT BAL (white balance) button** ㉗
Used for manual white balance adjustment.

6 **FOCUS button** ㉕
Used for manual focusing.

7 **IRIS control** ㉔
Normally set to the center position (green mark).

8 **INDEX MARK button** ㉘
Press to mark the index signal **during recording.**

9 **PUSH AUTO button** ㉖

10 **Display window**

11 **SENS (sensitivity) button** ㉑
Press when the scene to be recorded is too dark.

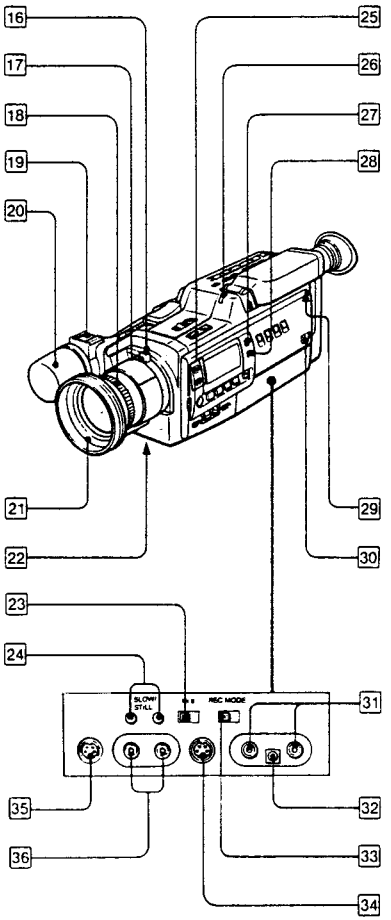
12 **SHUTTER SPEED button** ㉛
Used to select the shutter speed.

13 **AUTO LOCK switch** ⑮, ⑱
Normally set to the left AUTO LOCK position (green mark).
To adjust the focus, white balance, iris, sensitivity or shutter speed manually, set to the right position (white mark).

14 **FADER button** ㉜

15 **(one push white balance) button** ㉖
Press to adjust the white balance presicely.

A-2



A-2

16 **Macro set button** ㉔

17 **Zoom lever** ㉓

18 **Focus ring** ㉕

19 **Accessory shoe**
Attach a video light, etc.

20 **DUAL CAPSULE MIC (microphone)**
Select the appropriate function according to the shooting conditions.

21 **Lens hood**

22 **START/STOP button** ⑳
Used for low position recording.

23 **Hi8 (high eight) mode switch** ⑰, ⑱
When set to the AUTO (green mark) position, the recording mode will be selected automatically according to the tape to be used.

24 **SLOW/STILL ADJ (adjust) buttons** ㉛

25 **DATE and TIME buttons** ㉙
Press to display or turn off the date or time.

26 **Camera recording/battery/tape end lamp**
Lights during camera recording. It blinks when the battery is exhausted or the tape is at its end.

27 **ZERO MEM (zero memory) button** ㉙
Used to memorize the counter zero point.

28 **COUNTER RESET button** ㉙
Press to reset the counter to zero.

29 **RELEASE button** ❼
Press to remove the eyecup.

30 **BATT (battery eject) knob** ⑩

31 **VIDEO/AUDIO OUT (output) jacks (phono jacks)**

32 **RFU DC OUT (RFU adaptor DC output) jack (special minijack)**
Supplies power to the RFU adaptor.

33 **REC MODE selector**

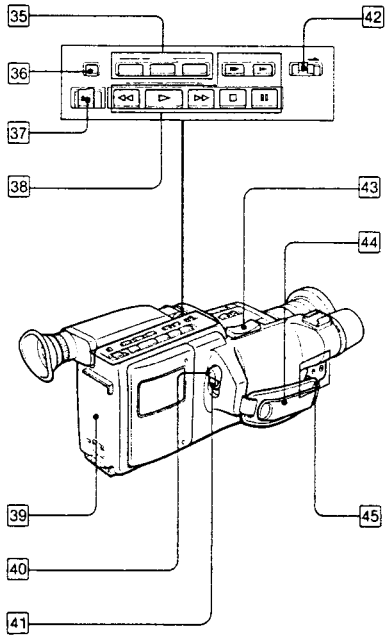
34 **S VIDEO OUTPUT connector (4-pin mini-DIN)**

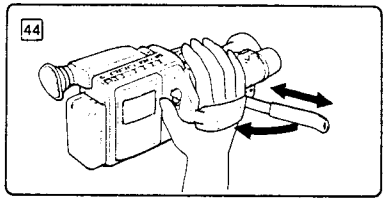
• **Note**
• AUS/E Model only

35 S VIDEO INPUT connector (4-pin mini-DIN)

36 VIDEO/AUDIO IN (input) jacks (phono jacks)

A-3





A-3

35 **INDEX buttons** ㉜
INDEX: Press to search the index signal marked.
MARK: Press to mark the index signal.
ERASE: Press to clear the index signal.

36 **DATA SCREEN button** ㉛
Press to display the indication on the viewfinder screen on the TV.

37 **EJECT (cassette eject) button**

38 **Tape transport buttons**
▷ (playback)
▶▶ FF (fast forward)
◀◀ REW (rewind)
■ (stop)
II (pause)
I▶ SLOW (slow speed playback)
II▶ FRAME (frame-by-frame playback)

39 **Battery mounting surface**

40 **STANDBY switch**
Slide up to set the unit to recording pause mode.

41 **START/STOP button** ⑰
Press to start and stop camera recording.

42 **EDIT switch** ⑱
Normally keep this switch at the left position. When editing a tape, set to the EDIT position.

43 **Variable power zoom button** ㉘

44 **Grip strap**
Adjust the length so that your thumb can easily manipulate the START/STOP button.

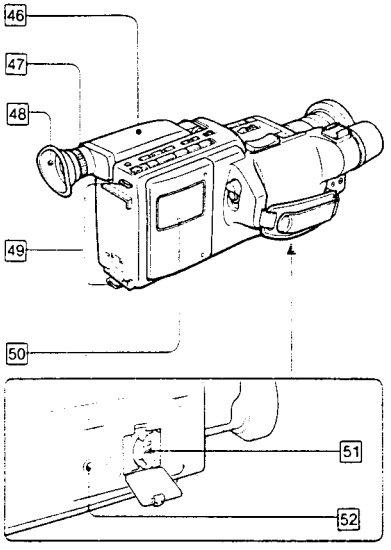
45 **BUILT-IN MIC (microphone) SELECT switch**
Normally set to the Hi-Fi (green mark) position.

EXT MIC (external microphone) and DC OUT (microphone power output) jacks
Connect an external microphone.
The EXT MIC jack accepts Sony "plug-in-power" microphones and supplies power to them.

REMOTE connector

⑨ **(earphone) jack**

A-4



A-4

46 **Viewfinder**
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution indicators and function mode are displayed on the viewfinder screen.

47 **Viewfinder lens adjustment ring**
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.

48 **Eyecup**

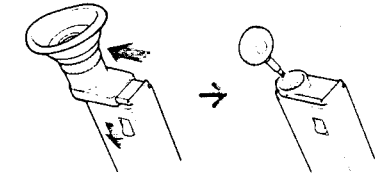
49 **Hooks for shoulder strap**
Attach a shoulder strap.

50 **Cassette holder**

51 **Lithium battery compartment**

52 **Tripod receptacle**

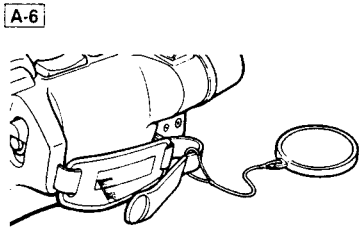
A-5



A-5

To remove dust from inside the viewfinder
While pressing the RELEASE button, slide the eyecup to the left.

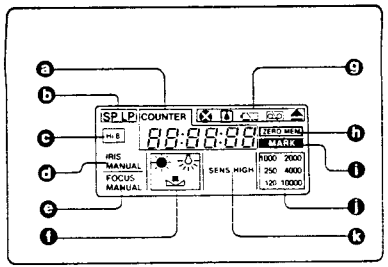
A-6

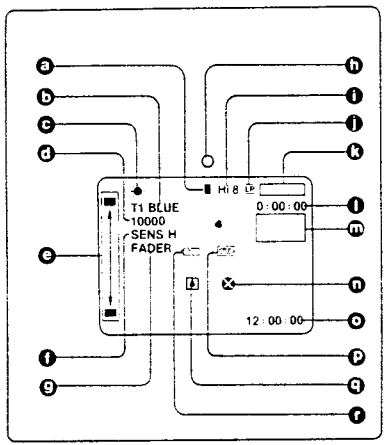


A-6

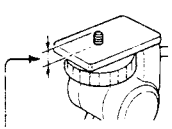
Lens cap
Hang the lens cap on the grip strap.

A-7





A-8



less than 6.5 mm

A-7

Indications in the display window

- ⓐ Time/date/counter indication
- ⓑ Tape speed indication
- ⓒ High eight mode indication
- ⓓ IRIS MANUAL indication
- ⓔ FOCUS MANUAL indication
- ⓕ Lights when the white balance is adjusted manually
- ⓖ Caution indications
- ⓗ ZERO MEM (memory) indication
- ⓘ Lights when the index signal is marked.
- ⓙ Shutter speed indication
- ⓚ SENS HIGH indication

Indications inside the viewfinder

- ⓐ Lights when the focus is adjusted manually
- ⓑ Title number and colour indication
- ⓒ Lights when the white balance is adjusted manually.
- ⓓ Shutter speed indication
- ⓔ Lights when the iris is controlled manually
- ⓕ Lights when the SENS button is pressed
- ⓖ FADER indication
- ⓗ Camera recording lamp
- ⓘ High 8 mode indication
- ⓙ Indicates the recording mode
- ⓚ In the VTR operation mode, this indicates the tape transport function.
- ⓛ Tape counter
- ⓜ ZERO MEM/INDEX MARK/ERASE/SCAN indication
- ⓝ Caution indication
- ⓞ Date/time
- ⓟ Tape indication
- ⓠ Dew indication
- ⓡ Battery indication

A-8

Note when attaching a tripod not manufactured by Sony

When attaching a tripod not manufactured by Sony, the length of the camera mounting screw must be less than 6.5mm. Otherwise the screw may damage the inner parts of the camera.

1-2. POWER SOURCES

Selection of Power Sources

This manual shows the operations on one of the following power sources.

Place		Power source	Accessory to be used
Outdoors		Battery pack	Battery pack NP-77 or NP-55 (page 10) Battery case EBP-55 (page 11)
Indoors		House current	AC power adaptor AC-V30 or AC-V55
In the car		12 V or 24 V car battery	DC pack DCP-55

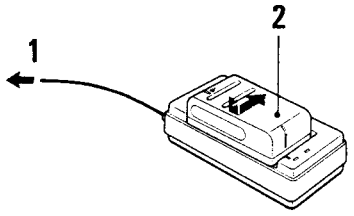
Notes on power source

- Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted cassette tape. If this is done by accident, supply the power again immediately and turn on the power switch.
- Be careful not to let any metal object touched on the metal part on the battery pack or AC power adaptor. When the battery pack is not to be used, keep it in its case.

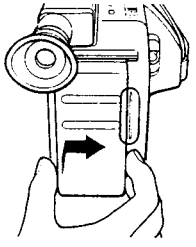
Optional Accessories for Charging

- **AC-V55 AC power adaptor**
  Two battery packs can be charged simultaneously.
- **BCA-70 or BCA-80 battery charge adaptor, ACP-88 AC pack and NPA-55 battery adaptor**
  For charging, insert an NP-55 into the NPA-55.

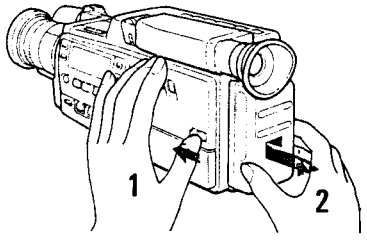
B-1



B-2



B-3



Battery Pack — NP-77 or NP-55

First, charge the battery pack. B-1
Use the AC-V30 AC power adaptor.
The charging time is about 2 hours for an NP-77 battery pack, or about 1 hour for an NP-55 battery pack.

1 Connect the AC-V30 to a wall outlet.
2 Attach the battery pack to the AC-V30.
Align the grooves on the battery pack with those on the AC-V30, and while pressing the battery pack, slide it as illustrated until it locks.

To attach the battery pack to the video camera recorder B-2
Align the right side of the battery pack with the line on the recorder, and while pressing the battery pack, slide it to the right.
Make sure that the battery is fitted completely to the mounting surface. Imperfect fit may damage the projections on the recorder.

To remove the battery pack B-3
While pressing the BATT knob in the arrow direction, slide and pull out the battery pack as illustrated.

Battery life
A fully-charged NP-77 battery pack provides approximately 50 minutes of continuous camera recording, and an NP-55 provides approximately 25 minutes of continuous camera recording.

When the video camera recorder is not in use, remove the battery pack.
If the battery is installed, even if the POWER switch is set to OFF, a very small amount of electric current flows.

When the battery becomes weak
The ⌧ indication blinks inside the viewfinder and in the display window.
Replace the battery pack with the fully charged one.

Notes
- The video camera recorder consumes power even in the recording pause mode. When recording short scenes using the recording pause mode, the battery life is less than half that of continuous recording.
When recording is not to be started soon, turn off the power with the STANDBY switch.
- If the battery pack is not fully charged or if it is used in a cold place, its operating time is also shortened.

Using the NP-22 battery pack
A fully-charged NP-22 battery pack can operate this unit for approximately 40 minutes. For using the NP-22, an optional NPA-22 battery adaptor is necessary.

Battery Case — EBP-55

You can operate the recorder on the battery case.

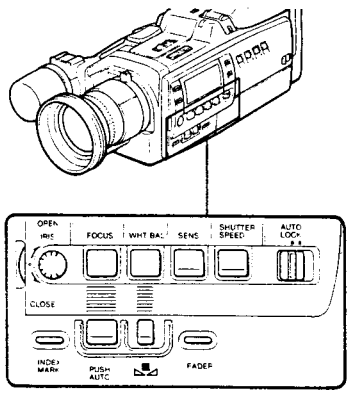
Battery life
The EBP-55 provides approximately 25 minutes of continuous indoor camera recording.

Notes on the battery case
- Be sure to use the alkaline batteries.
- The battery case cannot be used in a cold place.
- The ⌧ indication may not blink when the batteries in the battery case become weak, as the voltage of the battery lowers suddenly. If the cassette compartment does not open, replace the batteries.

For details, see the instruction manual of the EBP-55 battery case.

1-3. SELECTION OF THE AUTOMATIC AND MANUAL ADJUSTMENTS

C-4



Function of the AUTO LOCK Switch

When the AUTO LOCK switch is set to AUTO LOCK (green mark), the iris, focus, white balance, sensitivity and shutter speed (1/50) are adjusted automatically. But under certain circumstances, manual adjustment is better for effective recording. C-4

When the AUTO LOCK switch is set to the right position (white mark), each manual function works as follows.

IRIS See page 29.	• When the shooting subject is too dark, turn to OPEN. • When the shooting subject is too bright, turn to CLOSE. • Even if the AUTO LOCK switch is set to the right, when it is set to the green mark, the auto function will work.
FOCUS See page 24.	No indication ↔ ■ (Auto) (Manual) Each push of the button sequentially changes the function.
PUSH AUTO See page 26.	When this button is kept depressed, it activates auto focusing in the manual focusing mode.
WHT BAL See page 27.	No indication → ☀ → ☀ → ☀ (Auto) Each push of the button sequentially changes the function.
■ See page 28.	When the WHT BAL is set to ■, the white balance is adjusted manually.
SENS See page 30.	Press to get high sensitivity.
SHUTTER SPEED See page 31.	No indication → 1/120 → 1/250 → 1/1000 → (1/50) → 1/10000 → 1/4000 → 1/2000 Each push of the button sequentially changes the function.

Notes

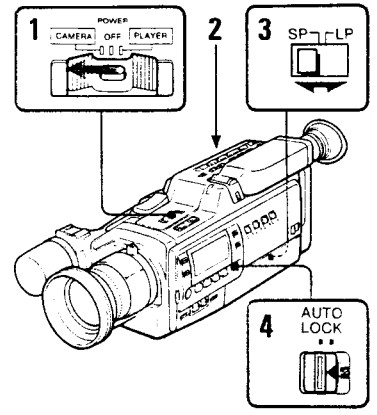
- Just after the battery pack is attached to the recorder, even if the AUTO LOCK switch is set to the right position, the AUTO LOCK function will work.
  But the IRIS is set to the condition just before the battery is removed.
- If the AUTO LOCK switch is set to AUTO LOCK after each function is adjusted manually, and then set to the right position again, the previous manual setting will be recalled.

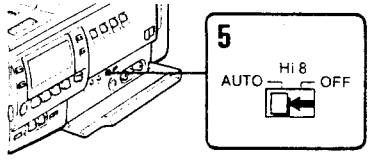
Function of the Hi8 Mode Switch

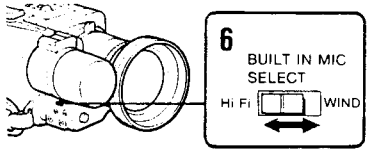
When the Hi8 mode switch is set to AUTO, the recording mode is selected automatically.
For Hi8 video system tape: Hi8 mode recording
For standard 8mm tape: Normal mode recording
When a tape for the Hi8 video system is used for normal recording, set the Hi8 mode switch to OFF.

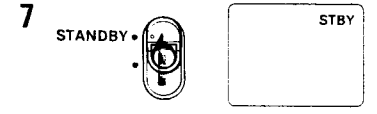
1-4. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

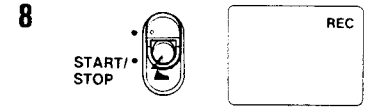
D-1











How to Record

D-1

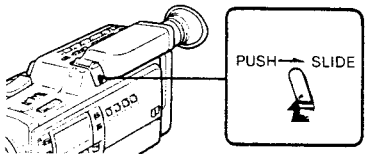
1 While pressing the small button, set the POWER switch to CAMERA.
2 Insert the cassette.
3 Set the REC MODE selector to LP or SP, according to the length of the programme to be recorded.
4 Set the AUTO LOCK switch to AUTO LOCK (green position).
5 Set the Hi 8 mode switch to AUTO (green mark).
6 Set the BUILT-IN MIC SELECT switch.
  Hi-Fi: For indoor recording, or outdoor recording when there is no strong wind. Hi-fi sound can be recorded.
  WIND: For outdoor recording when the wind is strong. The effects of noise from the wind will be decreased.
7 Slide the STANDBY switch up.
  The unit will enter the recording pause mode.
8 Press the START/STOP button.
  Recording will start.

Check on the viewfinder screen
STBY: Displayed during recording pause mode.
REC: Displayed during recording.

To stop recording
Press the START/STOP button again.
The unit will enter the recording pause mode.
Avoid rough handling or mechanical shock to the unit. A smooth transition between scenes may not be made.

D-2

D-3



To check the last portion of the previous recording

1 Set the recorder in recording pause mode by pressing the START/STOP button.
2 Press the – ⏪ EDITSEARCH button momentarily.

The last few seconds of the recorded portion are rewound and then the recorded picture is monitored on the viewfinder screen. The unit then enters the recording pause mode.

If the picture has not been recorded

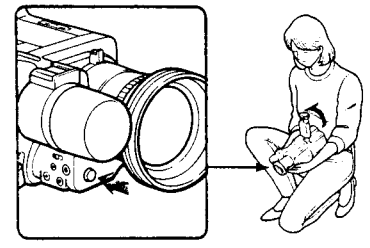
The video head may be contaminated. Clean the heads using the Sony V8-25CLH video head cleaning cassette.

After using

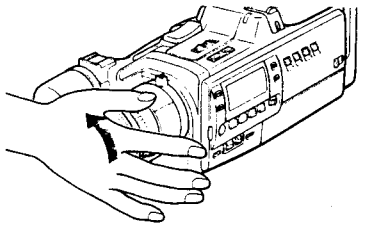
Slide the STANDBY switch down and set the POWER switch to OFF. (You need not press the center button when setting the switch to OFF.)

Hold the camera recorder as in the illustration. D-2
If your nose touches the recorder, adjust the position of the viewfinder. The viewfinder can be set to one of three positions, while pressing the PUSH SLIDE button. D-3

D-4



D-5



D-4

For low position recording

The viewfinder can be turned 90 degrees up.

1 Slide the STANDBY switch up.
2 Press the START/STOP button on the front.

When attaching the lens hood, filter or conversion lens, hold the focus ring.

When removing, press it with the palm of your hand and turn it counterclockwise. D-5

Note on power source

If the POWER switch is moved during recording, the tape will stop.

Notes on light sources

- Should you shoot a subject in bright conditions such as sunlight just after shooting in a dark place, the picture may not appear on the viewfinder screen. In this case, move the camera away from the subject to resume the normal condition.
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.

Notes on automatic adjustment

- During recording with auto focusing, do not turn or stop the focus ring forcibly.
- Keep the lens clean.

The camera recording with automatic adjustment may not produce optimum results under certain conditions. In this case, manually adjust the focus, white balance, sensitivity and iris. See pages 24, 27, 29 and 30.

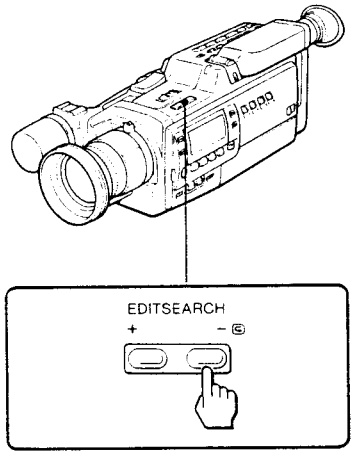
Indications inside the Viewfinder or in the Display Window

Indications for caution

	Slow blinking • The battery is weak. Fast blinking • The battery is exhausted.
	Slow blinking • The tape is near its end. • No cassette is inserted. Fast blinking • The tape is at its end.
⏏	Blinking • A fault has occurred in the unit.
⊗	Blinking • The gap of the head is clogged. (Head contamination)
	Blinking • Moisture has condensed inside the unit.

Indications showing the function in use

▮	• Lights when the focus function has been set to the manual mode. • Blinks when the auto focus function does not work due to low light or low contrast.
STBY, REC, PLAY, PAUSE, ◀◀, ▶▶, ▮▶, SLOW, STILL	Lights to show tape transport functions in the VTR operation mode.
INDEX MARK	• Blinks when the MARK button is pressed in the recording pause or playback pause mode. • Lights when the index signal is being marked.
INDEX ERASE	• Lights when the index signal is being erased.
INDEX SCAN, INDEX SEARCH	Lights when the index signal is being scanned.
☀, ⁘, 🏞	Lights when the white balance function is set to manual. ☀ Outdoor, ⁘ Indoor, 🏞 One push white balance
🏞	Blinks when the one push white balance is not set.
○	Lights in red during recording



Instant Playback on the Spot D-6

You can monitor the picture just recorded on the viewfinder screen.

1 While pressing the small button, set the POWER switch to CAMERA.
2 Slide the STANDBY switch up.
3 Keep pressing the "−" side of the EDITSEARCH button to view the playback picture in reverse.
4 Keep pressing the "+" side of the EDITSEARCH button to view the playback picture.

During Recording, to Record Again on the Previous Recorded Portion (Editsearch) 1

1 Slide the STANDBY switch up.
2 Monitor the picture on the viewfinder screen and locate the point from which the recording is to begin again with the EDITSEARCH button.
Keep pressing the "+" side of the EDIT-SEARCH button to advance the picture at a normal playback speed, or the "−" side to reverse the picture.
3 At the desired point, release the EDITSEARCH button.
The unit will be set to recording pause mode.
4 Press the START/STOP button to start recording.

Smooth recording can be made even if the recording is stopped and started again, or even if the power is turned off and on again, provided that the cassette is not removed. But, if the cassette has been removed, proceed as above.

To monitor the sound while viewing the playback picture on the viewfinder screen

Connect an earphone to the 🎧 jack.

1 While pressing the small button, set the POWER switch to PLAYER.
2 Press the ◀◀ button to rewind the tape.
3 Press the ■ button to stop the tape.
4 Press the ▶ button to start playback.

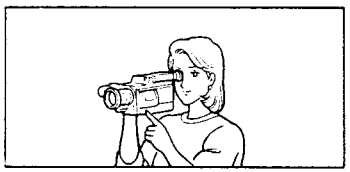
To stop the playback, press the ■ button.

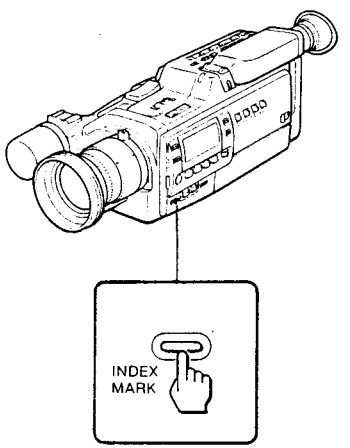
Note

To record smoothly, turn off the STANDBY switch when changing the battery.

1-5. TO MARK INDEX SIGNALS DURING RECORDING

D-7





The desired programme can be easily located by an index signal marked on the tape.
Press the MARK button at any desired point on the tape during recording. D-7

When the index signal is marked in the recording pause mode (the MARK indication blinks), the index signal will be marked just after the recording pause mode is released.

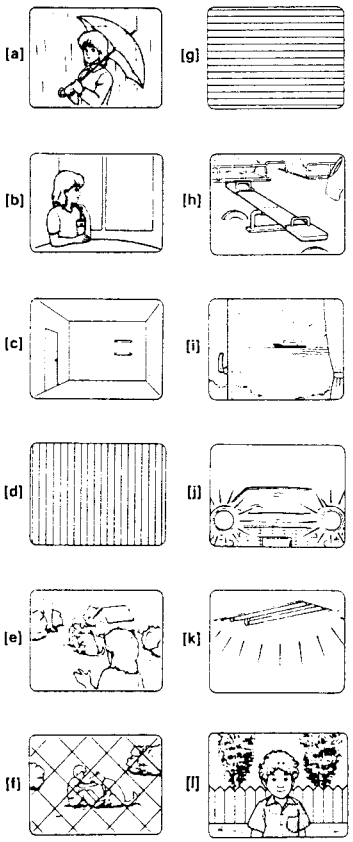
For other index operations, see page 52.

Notes

- The index signals can be marked at any desired point. But make sure there is more than 2 minutes of space between two index signals. If there is more than one index signal marked within an interval of 2 minutes at the normal tape speed, the unit may not function properly.
- The INDEX MARK indication disappears automatically.
  Continue to record until the INDEX MARK disappears so that the recorded index signal can be searched correctly in the playback mode.

1-6. MANUAL FOCUSING

E-1



E-2

Use manual focusing when shooting subjects difficult to focus automatically.

Poor Conditions for Auto Focusing E-1

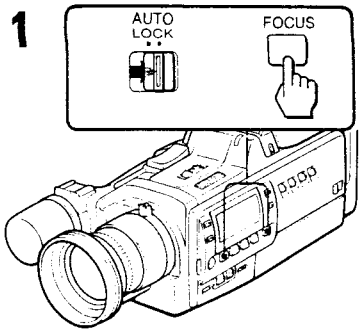
[a] Insufficient light
[b] Too much bright light behind the subject
[c] Subjects with flat colours and less contrast — wall, sky, etc.
[d] Finely detailed repetitive patterns
[e] When the distance between subjects at the center is extreme (e.g. one subject is close, the other is away)
[f] Subjects beyond screens, nets, etc. or when another subject passes across the camera
[g] Horizontal stripes
[h] Diagonal object
[i] When there is frosted glass between the shooting object and the recorder
[j] Bright object or object reflecting light
[k] When shooting under a fluorescent lamp at the shutter speed set to 1/250, 1/1000, 1/2000, 1/4000, 1/10000.
[l] Strong contrast behind the subject

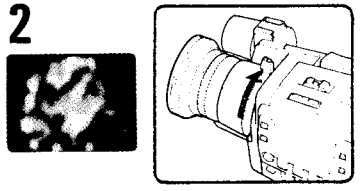
Other Uses of Manual Focusing

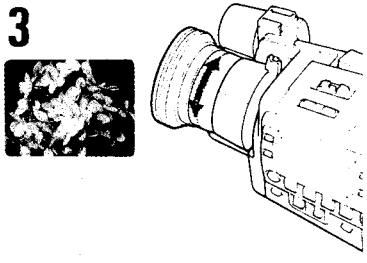
- When the white mark inside the viewfinder blinks
- When using special effects lenses or filters
- When shooting still subjects on a tripod
- To save battery wear
  (When the AUTO LOCK switch is set to AUTO LOCK, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)
- For focusing in close-up shooting, see page 34.

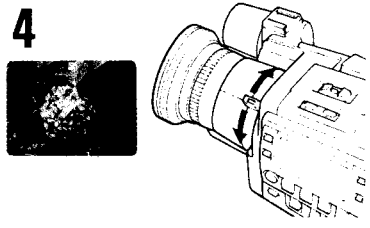
Auto focusing system

The auto focusing system incorporated in this unit utilizes high-precision sensors to determine picture contrast at the center of the viewfinder screen (the blue portion marked in the illustration) and adjust focus accordingly for automatic, highly accurate focusing E-2









Notes
Auto focus does not function momentarily in these cases:
- When the shutter speed or the white balance is changed
- When the iris is being adjusted
- When lighting conditions change quickly
- When the zooming is changed from wide-angle to telephoto
- When the sensitivity is changed.

It may take several seconds to get focus when the camera is rapidly panned from a distant subject to a near subject with less contrast. In this case, adjust the focus manually.

Note on automatic adjustment
While recording with the auto focusing function, do not touch the focus ring forcibly.

To Focus Manually E-3

1 Set the AUTO LOCK switch to the right position and press the FOCUS button. The white mark (■) will be shown in the viewfinder.
2 Turn the manual zoom lever to the telephoto position (88) to make the subject as large as possible in the viewfinder.
3 Turn the focus ring to achieve sharp focus.
4 Set the desired shot length using the manual zoom lever.

Some helpful hints
- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus by setting the zoom lever to the wide-angle position and the focus ring to 2 m, regardless of the distance between the subject and the recorder.
- When shooting in low light situations such as indoors, the depth of field in proper focus is very shallow. For best results, shoot at wide angles, after focusing in telephoto.
- The figures on the focus ring indicate the distance between the subject and the ⊙ mark on the recorder.
- Recommended illumination of this unit is more than 300 lux (28 footcandles). If shooting is done indoors or under other circumstances where light is insufficient, video lights must be used for best results. Under adequate light condition, the depth of field in proper focus is wider and a sharper picture will be recorded.

When the auto focusing is adjusted to the background
To adjust for the central subject, first shoot the near subject or set the focus ring to 1.3 m manually, and then set the AUTO LOCK switch to AUTO LOCK or press the PUSH AUTO button.

When the auto focusing is adjusted to the near object
To adjust for a distant view, first shoot the distant view or set the focus ring to ∞ manually, and then set the AUTO LOCK switch to AUTO LOCK or press the PUSH AUTO button.

It may take several seconds to get proper focus in following cases:
- When recording in low light conditions.
- When recording a face close-up.
- When recording still objects on a tripod.
- When panning or tilting shots are repeated.

Adjust the focus manually and press the PUSH AUTO button.

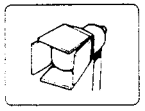
Quick Focus Adjustment

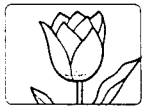
Press the PUSH AUTO button during recording in the manual focusing mode. Auto focusing will be activated only when the PUSH AUTO button is kept depressed.

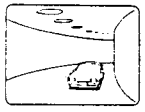
1-7. MANUAL WHITE BALANCE ADJUSTMENT

F-1

[a]

[b] 

[c] 

[d] 

[e]

[f]

In most cases, the auto white balance function of this unit operates automatically. However, if it does not work correctly in the conditions listed below, adjust the white balance manually.

Difficult Conditions for Auto White Balance [F-1]

[a]	When lighting conditions change quickly	☼
[b]	When the light source for the subject is different from that illuminating this unit, such as when the subject is in a spotlight, etc.	☼
[c]	When shooting a monochromatic subject or the background is monochromatic	▣
[d]	• When recording under a sodium lamp • When recording under a mercury lamp • When recording under a white fluorescent lamp	☼
	When recording under a colour matching fluorescent lamp	☀
[e]	When recording outdoors, such as a night view, neon sign or fireworks	☀
[f]	When recording outdoors, such as scenes after sunset or scenes before sunrise.	☀

To Adjust the White Balance Manually

1 While pressing the small button, set the POWER switch to CAMERA.
2 Slide the STANDBY switch up.
3 Set the AUTO LOCK switch to the right position.
4 Select the desired white balance mode by pressing the WHT BAL button.
Each push of the WHT BAL button cyclically changes the indication inside the viewfinder.

No indication (Auto) → ▣ → ☀ → ☼ →

For the colour temperature and the white balance adjustment.

To adjust the white balance precisely

1 While pressing the small button, set the POWER switch to CAMERA.
2 Set the recorder to the manual focusing.
3 Slide the STANDBY switch up.
4 Press the WHT BAL button to indicate the ▣ mark inside the viewfinder.
5 With the supplied white lens cap on the lens, point the recorder at a light source (indoors) or a subject (outdoors).
6 Press the ▣ button. The ▣ mark lights up.
If the ▣ mark does not light, adjust the white balance automatically.
This function will be kept memorized for about 1 hour after the power is turned off.

When recording in studio light or video light

Press the WHT BAL button so that the ☼ mark lights up. The ☼ mark position has been set so as to adjust the white balance according to studio lights or video lights.

When recording in fluorescent light

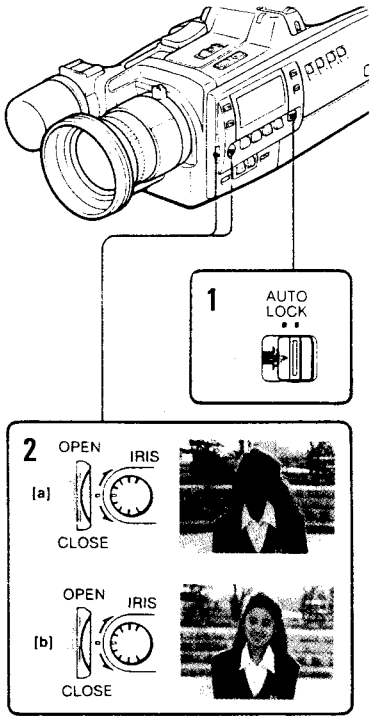
Use the AUTO or ▣ mode to adjust the white balance precisely.

Notes

- When the light source is changed, reset the ▣ mode again.
- When the one push white balance is adjusted for low light situations or without the white lens cap on the lens, even if the ▣ button is pressed, the ▣ indicator does not light up.
- The ▣ button does not function during recording.
- The white balance is related to iris and shutter speed adjustment. When the iris or shutter speed is adjusted manually, if the recorder is moved indoor to outdoor or vice versa, set the AUTO LOCK switch to AUTO LOCK and reset it to the right position again.
- When the recorder has been moved indoor to outdoor, or vice versa, or when the battery has been changed, slide the STANDBY switch up and point the recorder to a white object for about 10 seconds so that the white balance is adjusted properly.

1-8. MANUAL IRIS ADJUSTMENT

F-2



The iris is adjusted automatically when the AUTO LOCK switch is set to AUTO LOCK (green position). When shooting a scene with strong contrast, adjust the iris manually.

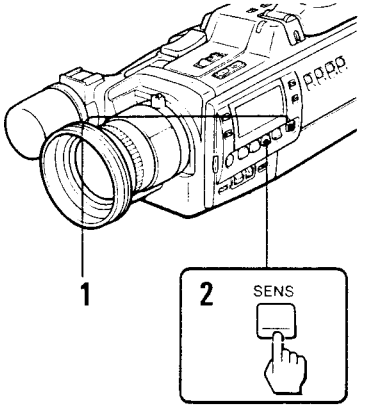
1 Set the AUTO LOCK switch to the right position (white mark).
2 Adjust the IRIS control.
   [a] When backlit shot results in the subject being too dark: **Turn IRIS toward OPEN.**
   [b] When a subject is too bright against a dark background: **Turn IRIS toward CLOSE.**

After shooting that particular scene, set the IRIS control to the center position (green mark) or set the AUTO LOCK switch to AUTO LOCK.

Note
Avoid pointing the recorder at the sun with the IRIS control set to OPEN.

1-9. SENSITIVITY IMPROVEMENT

F-3



When the entire scene is too dark and the subject is not clear, adjust the sensitivity. F-3

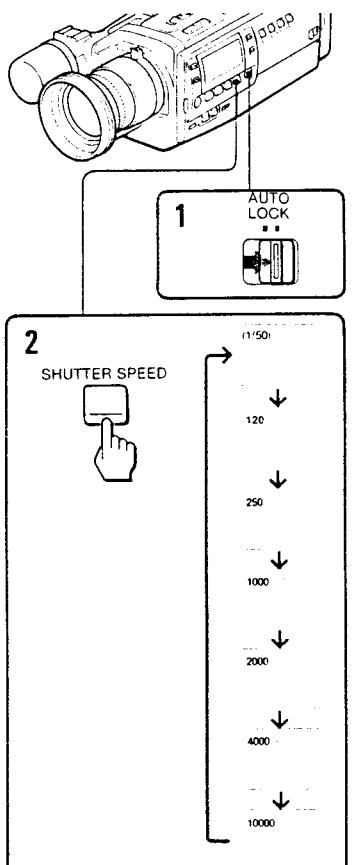
1 Set the AUTO LOCK switch to the right position (white mark).
2 Press the SENS button.
   The SENS H indicator appears on the viewfinder screen.

After shooting that particular scene, press the SENS button again or set the AUTO LOCK switch to AUTO LOCK.

1-10. SHUTTER SPEED ADJUSTMENT

G-1

G-2



When a fast-moving subject is recorded at a normal shutter speed, its still picture may not be seen clearly when played back G-1. This can be improved by increasing the shutter speed.
The shutter speed of this unit can be selected from seven speeds, 1/50 (normal speed), 1/120, 1/250, 1/1000, 1/2000, 1/4000 or 1/10000 second.
However, when the shutter moves fast, it will not allow enough light to come into the lens, so the picture will be dark. Therefore, when recording at a high shutter speed, record in a brighter place than usual.
Choose an appropriate shutter speed according to the place and situation.
See the chart below for examples.

Example use	Recommended shutter speed
• On clear days, recording golf or tennis scenes (To view the hit ball clearly in the pause mode, set to 1/10000 or 1/4000) • Recording the skiers	1/10000, 1/4000 or 1/2000
• On overcast days, recording a moving merry-go-round or jet-coaster • Recording outdoors from inside a vehicle (for stable shooting)	1/1000 or 1/250
• Instead of the ND2 filter (To reduce the exposure level to approx. 1/2) • Recording indoors (for stable shooting)	1/120

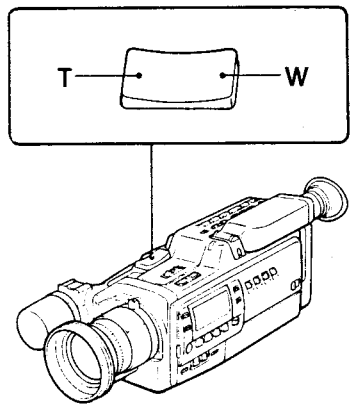
G-2

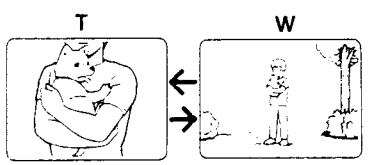
1 Set the AUTO LOCK switch to the right position.
2 Press the SHUTTER SPEED button repeatedly until the desired shutter speed indication appears on the viewfinder screen.
Each time the SHUTTER SPEED button is pressed, the indication changes:

No indication (1/50) → 120 (1/120) → 250 (1/250) → 1000 (1/1000) → 2000 (1/2000) → 4000 (1/4000) → 10000 (1/10000)

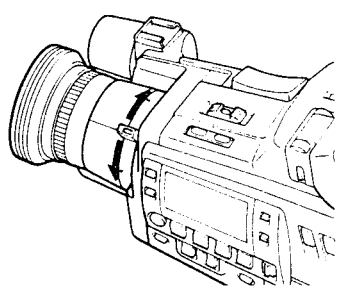
1-11. ZOOMING

H-1





H-2



The size of the subject in the scene can be changed.

Power Zoom H-1

— for smooth and constant zooming

Press the T side of the power zoom button for telephoto and the W side for wide-angle.
The zoom ring will move automatically.

The zooming speed is faster when the power zoom button is pressed firmly, and slower when the button is pressed lightly.

Manual Zoom H-2

— to create a dramatic effect

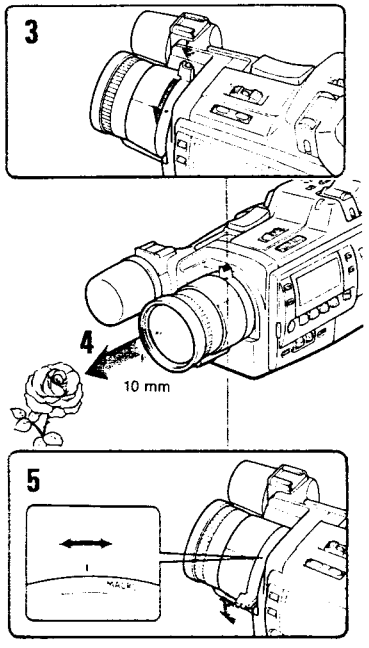
Turn the manual zoom lever upward for telephoto and downward for wide-angle.

For more zooming effect

- Use an optional conversion lens.
  Auto focus, however, will not function in that case.
- The focal length of this unit is 11 mm to 88 mm. Converted into the focal length of a 35 mm camera, this means approximately f-44 mm to 352 mm.
- The zooming speed cannot be changed by the optional Remote Commander.

1-12. CLOSE-UPS (MACRO)

I



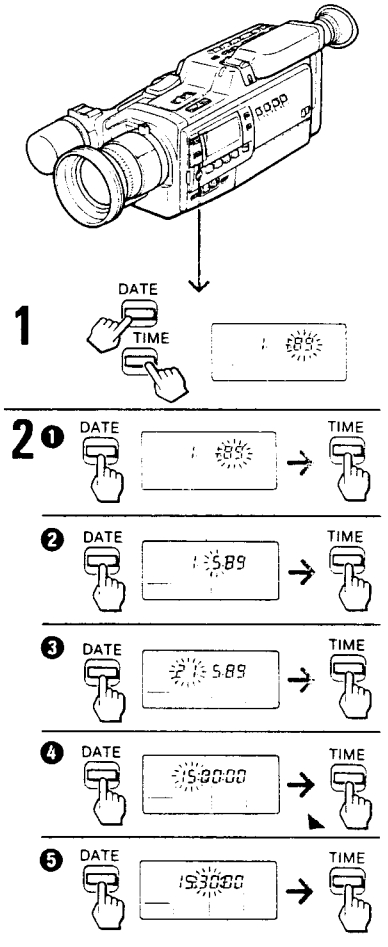
Even tiny objects can literally fill the screen for dramatic close-up effects.
Remove the lens hood before operation.

1 Set the AUTO LOCK switch to the right position.
2 Press the FOCUS button so that the white mark appears in the display window.
3 Turn the zoom lever to the MACRO position. pressing the macro set button.
4 Bring the recorder as close as necessary to obtain the desired subject size.
The subject can be as close as approximately 10 mm (13/32 in.) from the lens surface.
5 Turn the zoom lever within the MACRO range to focus sharply. (The power zoom button can be used instead of the zoom lever.)

Notes
- Auto focusing does not function properly in macro shooting.
- If the subject is closer than 10 mm. it cannot be brought into focus.
- When shooting in macro. the depth of field is very shallow. so pay attention to focus. To keep the subject in focus. use a tripod or monopod.

1-13. RECORDING DATE OR TIME

J-1



Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time, make sure that the power source and lithium battery are installed.

To Set Date and Time J-1

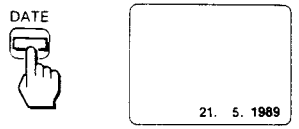
1 Press the DATE and TIME buttons simultaneously **for more than 3 seconds.**
The date indication will appear in the display window (date/time setting mode).
The DATE button now functions as the + button and the TIME button functions as the next button.
2 Adjust the ❶ year. ❷ month. ❸ day. ❹ hour and ❺ minute in sequence, following the illustration.
First adjust the blinking digits with the DATE button, and then press the TIME button.
After adjusting the minute digits, press the TIME button at the same time with an announced time signal.

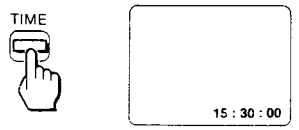
The clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

To clear the time indication from the display
Press the TIME button again.

The DATE button can be pressed in two ways
- When you keep the button pressed. the digits will advance continuously.
- When you press and immediately release the button. the digits will advance by one.

J-2





To check the preset date or time
Press the DATE or TIME button in the recording pause mode. When the same button is pressed again, the indication goes off.

To readjust an incorrect date or time
Set the unit to date/time setting mode and press the TIME button repeatedly until the incorrect digit blinks. Correct it with the DATE button and press the TIME button. After adjusting the minute digits, press the TIME button at the same time with an announced time signal.

Note
The date and time cannot be set during recording. If the recorder is set to the recording mode while setting the date and time, the setting mode will be released.

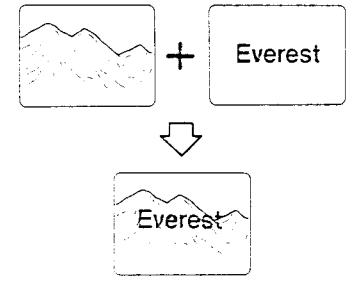
To Record the Date or Time J-2

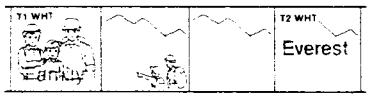
During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.
The date or time being displayed will be recorded together with the picture.

To stop recording the date or time
Press the DATE or TIME button again. The picture recording will continue.

1-14. RECORDING A TITLE

K-1





Before recording, memorize a title or figure. The memorized title or figure is superimposed onto the picture being recorded. K-1

- Two kinds of titles or figures can be memorized.
- The colour of the title or figure can be selected from 8 colours.

Make sure that the lithium battery is installed.

Preparations

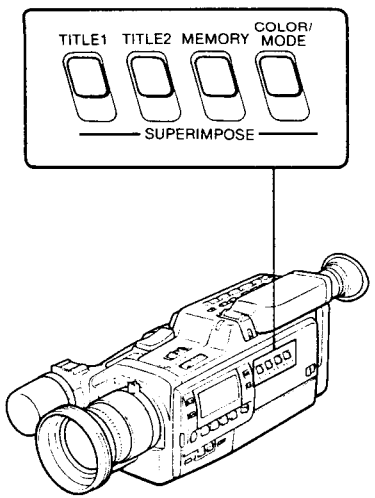
To make a desired title card
- Use a white and plane card and draw the title on it with a deep colour (black is recommended for the best result) in thick letters.
  If contrast is clear, a signboard can be memorized like the title card.
- When deciding the title size, check the effective picture size on your video monitor.

Before memorizing a title
- Fix the title card and the video camera recorder.
- Use of an appropriate light is recommended for a better result.

Function of the COLOR/MODE button
This button is used to select the title colour or title mode.

When the title is displayed	When the title is not displayed
Used as the COLOR button.	Used as the MODE button.
┌ WHT → BLUE → GRN → CYAN ┐ (white) (green) └ BLK ← YEL ← VIO ← RED ┘ (black) (yellow) (violet)	┌ No title mode ┐ └ ↑ → T → T ↑ ┘ ↑ title scroll mode T title reverse mode T ↑ title reverse and scroll mode
Each push of the COLOR/MODE button cyclically changes the colour or mode.	

K-2



To Memorize the Title K-2

1 While pressing the small button, set the POWER switch to CAMERA.
2 Slide up the STANDBY switch to set the unit in the recording pause mode.
3 Point the camera to the title card and adjust the focus.
4 Press the TITLE 1 or 2 button.
5 Press the MEMORY button to memorize the title.
6 Select the title colour while observing the colour indication in the viewfinder. Each push of the COLOR/MODE button cyclically changes the colour, as follows:

WHT (white) → BLUE → GRN (green) → CYAN
↑ ↓
BLK (black) ← YEL (yellow) ← VIO (violet) ← RED

7 Press the TITLE 1 or 2 button (pressed in step 4) to turn off the title.

Notes
- The colour indication in the viewfinder is not recorded on the tapes.
- You can change the title colour even after starting the recording.

To check the title
To check the memorized title, press the TITLE 1 or 2 button. To turn off the title, press the button again.

To Record the Title

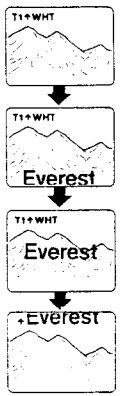
To record the title from the beginning
Press the TITLE 1 or 2 button in recording pause mode, and then start recording.

To record during camera recording
Press the TITLE 1 or 2 button at the point from which the title is to be inserted.
The memorized title will be recorded together with the picture.

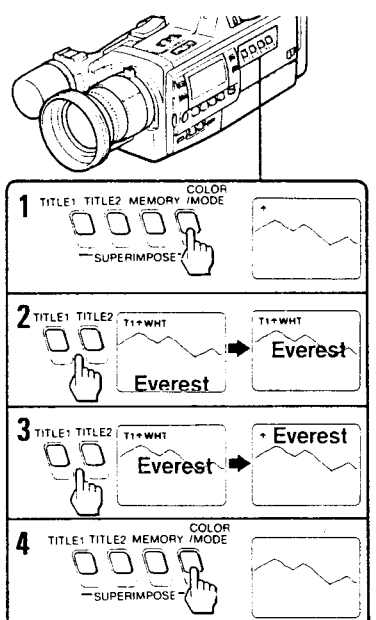
To stop recording the title
Press the TITLE 1 or 2 button again. The picture recording will continue.

To record the same title several times
By repeating the above procedure, you can record the title as many times as desired.

K-3



K-4



To Scroll the Title from Bottom to Top

During recording, the memorized title can be scrolled from bottom to top. K-3

To check the scrolled title K-4
1 In the recording pause mode, press the COLOR/MODE button.
The arrow mark will be displayed.
2 Press the TITLE 1 or 2 button.
The title will be displayed from bottom to center.
3 Press the TITLE 1 or 2 button again.
The title will be displayed from center to top.
4 Press the COLOR/MODE button **three times.**
The arrow mark will disappear.

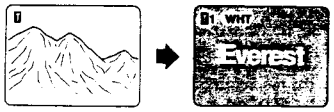
To record the scrolled title
1 In the recording pause mode, press the COLOR/MODE button.
The arrow mark will be displayed.
2 Start the camera recording.
3 Press the TITLE 1 or 2 button at the point from which the scrolled title is to be recorded.
4 After the title stops at the center of the picture, press the TITLE 1 or 2 button again.
The title is scrolled from center to top.

To clear the scroll mode
After recording, press the COLOR/MODE button **three times.**

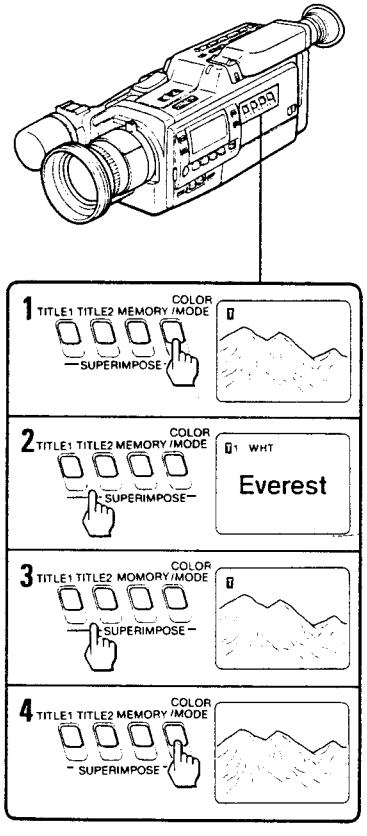
If you do not want to record the picture for the background
Point the recorder to a white, flat object such as a white wall, paper, etc.

To change the colour of the title
While the title is being scrolled or displayed at the center, press the COLOR/MODE button.

K-5



K-6



To Reverse the Title and the Background

The colour scheme of the title and the background can be reversed. K-5

To check the reversed picture K-6

1 In the recording pause mode, press the COLOR/MODE button **twice.**
The T mark will be displayed.
2 Press the TITLE 1 or 2 button.
The reversed title and background will be displayed.
3 Press the TITLE 1 or 2 button again.
4 Press the COLOR/MODE button **twice.**
The T mark will disappear.

To record the reversed picture from the beginning

1 In the recording pause mode, press the COLOR/MODE button **twice.**
The T mark will be displayed.
2 Press the TITLE 1 or 2 button.
3 Start the camera recording.
4 Press the TITLE 1 or 2 button again to clear the reversed picture.

To record the reversed picture during recording

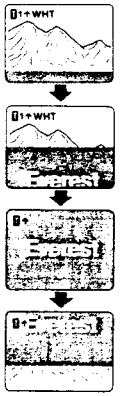
1 In the recording pause mode, press the COLOR/MODE button **twice.**
The T mark will be displayed.
2 Start the camera recording.
3 Press the TITLE 1 or 2 button at the point from which the reversed picture is to be recorded.
4 Press the TITLE 1 or 2 button again to clear the reversed picture.

To clear the reverse mode
After recording, press the COLOR/MODE button **twice.**

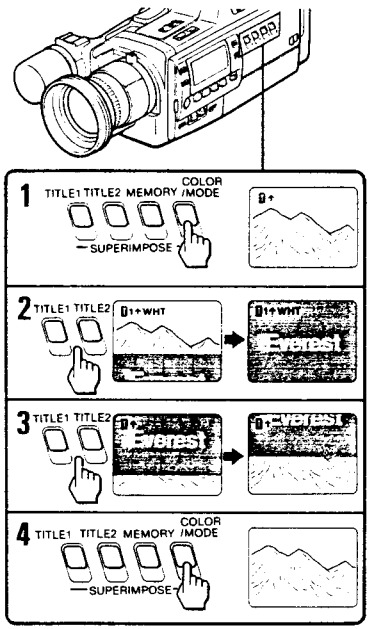
If you do not want to record the picture for the background
Point the recorder to a white, flat object such as a white wall, paper, etc.

To change the colour of the background
While the title is being displayed, press the COLOR/MODE button.

K-7



K-8



To Scroll the Reversed Title K-7

To check that the reversed title is scrolled K-8

1 In the recording pause mode, press the COLOR/MODE button **three times.**
The arrow mark and the T mark will be displayed.
2 Press the TITLE 1 or 2 button.
The reversed picture will be displayed from bottom to center.
3 Press the TITLE 1 or 2 button again.
The title will be displayed from center to top.
4 Press the COLOR/MODE button **once.**
The marks will disappear.

To record the reversed and scrolled title

1 In the recording pause mode, press the COLOR/MODE button **three times.**
The arrow mark and the T mark will be displayed.
2 Start the camera recording.
3 Press the TITLE 1 or 2 button at the point from which the scrolled title is to be recorded.
4 After the reversed title stops at the center of the picture, press the TITLE 1 or 2 button again.
The reversed title is scrolled from center to top.

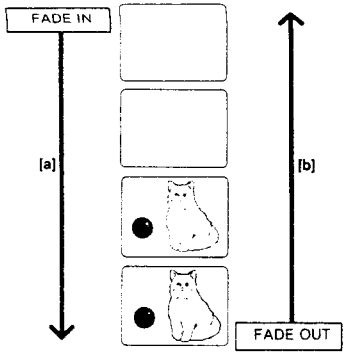
To clear the reversed scroll mode
After recording, press the COLOR/MODE button **once.**

If you do not want to record the picture for the background
Point the recorder to a white, flat object such as a white wall, paper, etc.

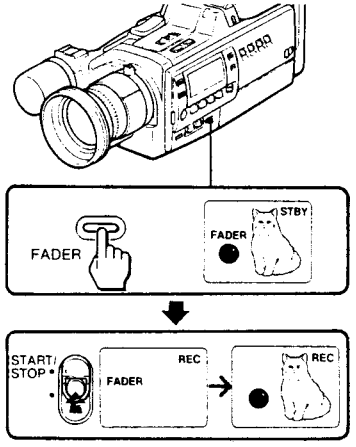
To change the colour of the background
While the title is being scrolled or displayed at the center, press the COLOR/MODE button.

1-15. FADE-IN AND FADE-OUT

L-1



L-2



L-3

When fade-in, the picture and sound will appear gradually from a white, silent scene. [a]
With fade-out, the picture and sound will disappear gradually. [b]
Dramatic effects can be added by using fade-in at the beginning of a recording and fade-out at the end.

To Fade in L-2

1 Slide the STANDBY switch up to set the unit to recording pause mode.
2 Press the FADER button.
3 Press START/STOP button to start camera recording.
Fade-in will be performed.

To Fade out

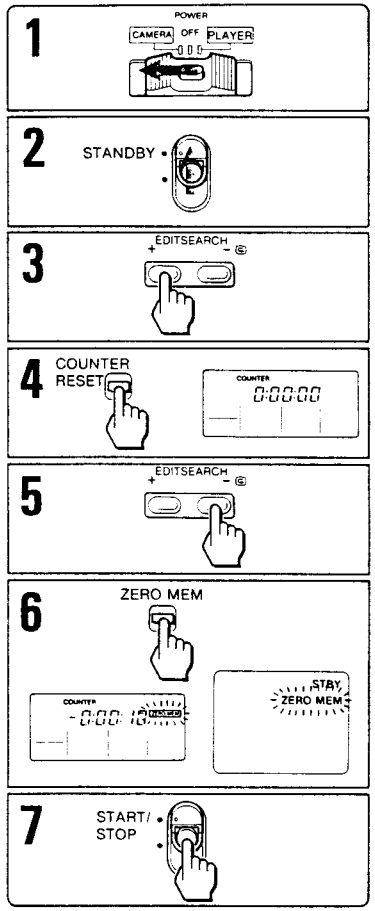
1 Start camera recording.
2 Press the FADER button.
3 At the point where fade-out is to be started, press the START/STOP button.
Fade-out will be performed and then recording will stop. L-3

To cancel FADER mode before fade-in or fade-out
Press the FADER button so that the FADER indication disappears.

Notes
- The FADER button does not function while the STBY indicator is blinking on the viewfinder screen immediately after the POWER switch has been set to CAMERA. Wait until the STBY indicator lights.
- The FADER mode is cancelled automatically once fade-in or fade-out has been performed.

1-16. EDITSEARCH

M



You can insert (record) video and audio simultaneously from the camera onto any recorded tape.

Operation M

- Monitor the picture being inserted on the viewfinder screen.
- Select the same tape speed as was used for already recorded portion with the REC MODE selector.

1 While pressing the small button, set the POWER switch to CAMERA.
2 Slide the STANDBY switch up to set the unit to recording pause mode.
3 Keep pressing the "+" or "−" side of the EDITSEARCH button and release the button at the point where the insert should **end.**
The unit will be set to recording pause mode.
4 Display the counter in the display window and press the COUNTER RESET button.
The counter is reset to zero.
(For an accurate ending point, press the COUNTER RESET button immediately after the EDITSEARCH button is released and while the still picture is displayed.)
5 Keep pressing the "−" side of the EDITSEARCH button and release the button at the point where the insert should **begin.**
6 Press the ZERO MEM button.
The insert ending point is stored in memory.
7 Press the START/STOP button.
Insert recording will begin.

The insert recording will stop automatically near the counter zero point.

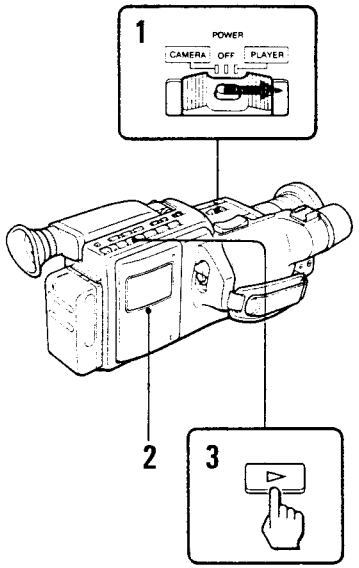
To cancel ZERO MEM mode
Press the ZERO MEM button so that the ZERO MEM indicator disappears.

To change the insert ending point
Press the ZERO MEM button to turn off the ZERO MEM indicator and repeat steps 3 through 6 above.

To insert the date or time
Follow steps 1 through 6 above, press the DATE or TIME button to display the date or time indication on the viewfinder screen and then press the START/STOP button.

1-17. PLAYBACK

O-1



Turn on the TV (or colour monitor), and select the programme position for viewing a playback picture (or set the TV/VIDEO selector to VIDEO).

O-1

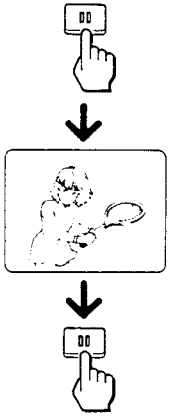
1 While pressing the small button, set the POWER switch to PLAYER.
2 Insert a cassette.
3 Press the ▶ button.
Playback will start.

To stop the tape, press the ■ button.

After using, be sure to set the POWER switch on the recorder to OFF.

To view a still picture O-2
Press the ❚❚ button during playback. To resume playback, press the ❚❚ button again.

O-2



Monitoring a High-Speed Picture

During playback
1 In the playback mode, press the ◀◀ or ▶▶ button.
The picture will be monitored at high speed as long as it is kept pressed.
2 Release the ◀◀ or ▶▶ button at the desired point.
Normal playback will resume.

During fast-forward or rewind
1 Press the ▶▶ button in fast-forward mode or press the ◀◀ button in rewind mode.
The picture is displayed while the button is kept pressed.
2 Release the ◀◀ or ▶▶ button to resume normal fast-forward or rewind mode.

Notes
- If you move the position of the POWER switch during playback, the tape will stop. When you move the POWER switch to CAMERA in the playback pause mode, however, the unit will enter recording pause mode.
- When the pause mode lasts for 5 minutes or more, the unit will automatically enter the stop mode.
- The sound will be muted in the high-speed picture.
- When a tape is recorded in SP mode, a high-speed picture may be noisy with many streaks and become black and white. Streaks will be wider than those of an LP-recorded tape.

Frame-by-frame playback
Press the ❚❚▶ button in the still picture mode. To resume normal playback, press the ▷ button.

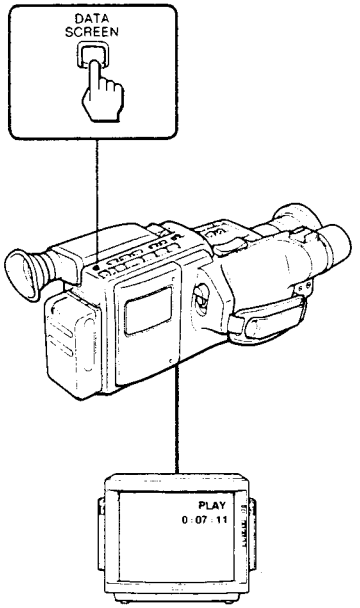
Slow motion playback
Press the ❚▶ button in the still picture mode or playback mode. To resume normal playback, press the ▷ button.

To adjust the frame-by-frame and slow playback pictures
Press the SLOW/STILL ADJ buttons.
The adjustment can be kept memorized until the lithium battery is exhausted.

To adjust the still picture
If the still picture appears to shake, press the "+" or "−" of the SLOW/STILL ADJ button until the picture stabilizes. The adjustment can be kept memorized until the lithium battery is exhausted.

Notes
- When a tape is recorded in the SP mode, streaks will appear in the still picture, frame-by-frame playback and slow playback modes.
- When the playback picture is viewed on another VTR or the viewfinder of this unit, adjust the picture again.
- When a tape is recorded on another VTR, adjust the playback picture. However in some cases the picture may not be adjusted.

O-3



To Display the Indication on the Viewfinder Screen on the TV O-3

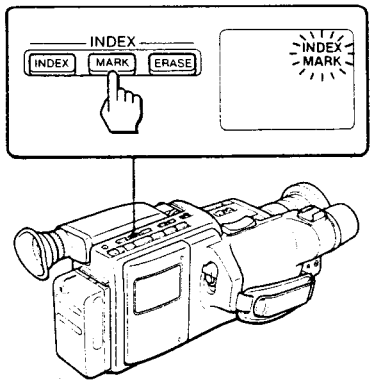
Press the DATA SCREEN button.
The indication on the viewfinder screen is superimposed on the TV programme.
It is convenient to check the indication on the TV screen when the playback picture is viewed on the TV or when the video camera recorder is operated from a distance using the Remote Commander.

To clear the indication, press the DATA SCREEN button again.

Notes
- To edit from the CCD-V900E to another VTR, clear the indication on the TV or the indication will be recorded with the picture.
- During playback or in the still picture mode, the data indications appear to shake.

1-18. TO MARK INDEX SIGNALS DURING PLAYBACK

P-1



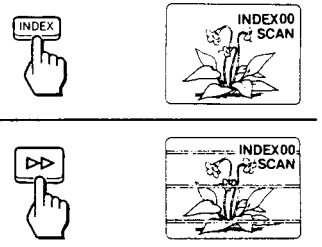
The desired programmes can be easily located by the index signals marked on the tape.
Press the MARK button at any desired point on the tape during playback. P-1

When the index signal is marked in the playback pause mode (the MARK indication blinks), the index signal will be marked just after the playback pause mode is released.

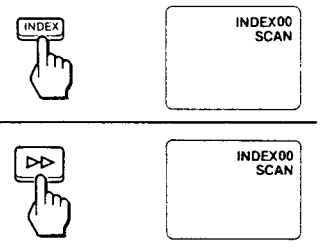
Notes

- The index signals can be marked at any desired point. Make sure there is more than 2 minutes of space between two index signals. If there is more than one index signal marked within an interval of 2 minutes at the normal tape speed, the unit may not function properly.
- The recorded sound cannot be heard and a black bar appears at the bottom of the playback picture while the index signal is being marked during playback.
  However, the recorded signals are not affected.
- The index signals cannot be registered on a cassette tape whose safety tab is slid out.

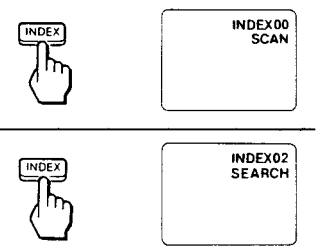
P-2



P-3



P-4



To Scan or Search the Programme during Playback

To scan the beginning of each programme during monitoring the picture — index scan (1) P-2

1 Press the INDEX button in the playback or playback pause mode.
2 Press the ◀◀ or ▶▶ button.
  The tape is played back for approximately 10 seconds at the point where the index signal is marked.
3 To continue playback, press the ▷ button.
  When no button is pressed, the picture is automatically scanned to the next or previous programme.

To scan the beginning of each programme in sequence — index scan (2) P-3

1 Press the INDEX button in the stop mode.
2 Press the ◀◀ or ▶▶ button.
  The tape is played back for approximately 10 seconds at the point where the index signal is marked.
3 Press the ▷ button to continue playing back the desired picture.

When no button is pressed, the picture is automatically scanned to the next or previous programme.

To locate the desired programme — index search P-4

1 Press the INDEX button in the stop or playback mode.
2 Press the INDEX button again until the index number of the desired programme is displayed on the viewfinder screen.
3 Press the ◀◀ or ▶▶ button.
  The playback is started at the beginning of the designated picture.

To correct the index number

Press the ■ button and repeat the above steps.

P-5

To Erase Index Signals P-5

1 Play back the beginning of the picture to be erased by index scan or index search.
2 Within approximately 10 seconds, while the tape is being played back, press the ERASE button.
When the index signal is erased while index scanning, the index scan is resumed.
When the index signal is erased while index searching, normal playback is begun.

Notes

- Press the ERASE button more than 2 seconds after the playback starts.
- If the safety tab on the cassette is slid out, the index signal cannot be erased.
- While an index signal is being erased, the recorded sound cannot be heard and a black bar appears at the bottom of the playback picture. However, recorded signals are not affected.
- The index signal marked by a VTR such as the EV-S850 series can be detected with this unit but cannot be erased.
  The index signal marked by this unit can be detected with a VTR such as the EV-S850 series but cannot be erased.
- When the audio is dubbed in the portion where the index signal is marked, the index signal may be erased.

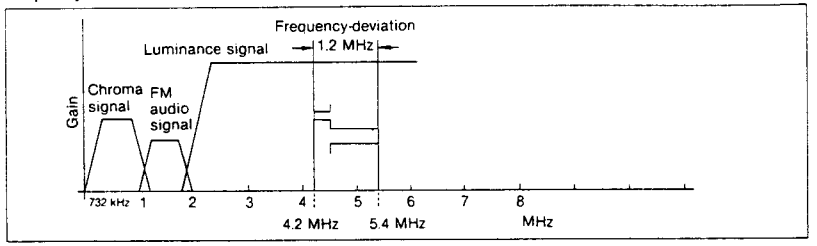
1-19. Hi8 (HIGH EIGHT) VIDEO SYSTEM

The 8 mm video system employs a metal powder tape. This means the video camera recorder is capable of recording a large amount of information and enhances picture quality. Taking advantage of the 8 mm video system, the Hi8 video system has been developed. The main characteristics of the Hi8 video system are as follows:

Super High Quality Picture

The information capacity is a key element for picture improvement. It can be increased by shifting up the FM carrier frequency range. In the Hi 8 video system, the FM carrier frequency range of the luminance signal is shifted up to 5.7–7.7 MHz. This is higher than the 4.2–5.4 MHz range of the standard 8 mm video system. Thanks to this, the horizontal resolution is improved to more than 400 lines.

Frequency allocation of the standard 8 mm video system



Frequency allocation of the Hi8 video system